

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claim 1 (Currently Amended): An apparatus, operable in a wireless communication system, comprising:

an encode manager included within wireless service provider equipment of the wireless communication system for receiving a multimedia stream; and

an encoder system included within the wireless service provider equipment for re-encoding the received stream using an encoding parameter set to ~~render output~~ an encoded stream with principles set forth by the encoding parameter set, wherein the encoding parameter set is determined according to an encoding scheme based on available bandwidth within the wireless communication system ~~a encoding scheme~~.

Claim 2 (Currently Amended): The apparatus of claim 1, wherein the encoding scheme is selected from a group consisting of a scheme based on a system bandwidth, a ~~scheme based on available system bandwidth~~, a scheme based on a wireless receiver capability, a scheme based on a number of users requesting a specific multimedia stream at a designated QoS, a scheme based on a multimedia data type, a scheme based on a user preference and a scheme based on characteristics of a mobile station.

Claim 3 (Currently Amended): The apparatus of claim 2, wherein the scheme based on user preference is used to generate ~~[[a]]~~ billing information.

Claim 4 (Currently Amended): The apparatus of claim 2, wherein the scheme based on multimedia data type is used to generate ~~[[a]]~~ billing information.

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Claim 5 (Currently Amended): The apparatus of claim 2, further comprising an encoder for executing the encoder parameter set based on the encoding scheme.

Claim 6 (Currently Amended): The apparatus of claim 2, further comprising a plurality of encoders, each for executing the encoder parameter set based on the encoding scheme.

Claim 7 (Currently Amended): The apparatus of claim ~~[[2]]~~1, further comprising a bandwidth manager for determining the available bandwidth for a requested multimedia stream.

Claim 8 (Currently Amended): The apparatus of claim 1, further comprising a decoder for receiving the multimedia stream ~~at a decoder~~ and decoding the received stream to ~~render~~ output a decoded stream, wherein the encoder system re-encodes the received stream by re-encoding the decoded stream using the encoding parameter set to output the encoded stream with principles set forth by the encoding parameter set.

Claim 9 (Original): The apparatus of claim 1, wherein the encoder manager comprises a bandwidth manager for determining the encoding parameter set based on the encoding scheme.

Claim 10 (Original): The apparatus of claim 1, wherein the encoder system comprises an encoder for executing the encoder parameter set.

Claim 11 (Currently Amended): The apparatus of claim 1, further comprising a transceiver for wirelessly transmitting the re-encoded stream to a mobile station.

Claim 12 (Original): The apparatus of claim 1, wherein the encoding system providing an output configurable for handheld devices that require a first frame rate and a first bandwidth.

Claim 13 (Original): The apparatus of claim 12, wherein:
the first frame rate is 10 frames per second; and
the first bandwidth is within 16 kilo bits per second.

Claim 14 (Currently Amended): The apparatus of claim 1,
wherein the received stream comprises a stream of ~~having~~ a first resolution, and
wherein the encoding system re-encodes[[ing]] the received stream by re-encoding the
stream of a first resolution to a stream of a second resolution, a first frame rate and a first
bandwidth.

Claim 15 (Currently Amended): The apparatus of claim 14, wherein:
the first resolution is a video graphics array (VGA) format; and
the second resolution and first frame rate are configured for a handheld device.

Claim 16 (Original): The apparatus of claim 14, wherein:
the first frame rate is within 10 to 15 frames per second; and
the first bandwidth is within 16 to 64 kilo bits per second.

Claim 17 (Original): The apparatus of claim 14, wherein:
the first frame rate is within 10 to 15 frames per second; and
the first bandwidth is within 32 to 64 kilo bits per second.

Claim 18 (Currently Amended): The apparatus of claim 14, wherein the second resolution is
a resolution of a quarter common intermediate format (QCIF) or smaller.

Claim 19 (Currently Amended): The apparatus of claim 14, wherein the second resolution is
a resolution of a common intermediate format (CIF) or larger.

Claim 20 (Original): The apparatus of claim 1, further comprising a computer configured to
receive the multimedia stream from a mobile station.

Claim 21 (Currently Amended): The apparatus of claim 20, wherein the mobile station
~~phone~~ is operable in the wireless communication system.

Claim 22 (Original): The apparatus of claim 1, wherein the multimedia stream is received using an over the air communication air interface.

Claim 23 (Original): The apparatus of claim 1, wherein the multimedia stream is received using an internet connection.

Claim 24 (Currently Amended): The apparatus of claim 1, further comprising a customer manager for generating [[a]] billing information based on user's preference.

Claim 25 (Currently Amended): A method for providing digital multimedia in a wireless communication system, comprising:

receiving a multimedia stream at an encode manager of the wireless communication system; and

re-encoding, with an encoder system of the wireless communication system, the received stream using an encoding parameter set to ~~render~~ output an encoded stream with principles set forth by the encoding parameter set, wherein the encoding parameter set is determined ~~based according to~~ a first encoding scheme based on available bandwidth within the wireless communication system.

Claim 26 (Currently Amended): The method of claim 25, further comprising selecting the first encoding scheme from a group consisting of a scheme based on a system bandwidth, a ~~scheme based on available system bandwidth~~, a scheme based on a wireless receiver capability, a scheme based on a number of users requesting a specific multimedia stream at a designated QoS, a scheme based on a multimedia data type, a scheme based on a user preference and a scheme based on characteristics of a mobile station.

Claim 27 (Original): The method of claim 26, further comprising generating billing information using the scheme based on user preference.

Claim 28 (Original): The method of claim 26, further comprising generating billing information using the scheme based on multimedia data type.

Claim 29 (Original): The method of claim 26, further comprising executing the encoder parameter set using an encoder.

Claim 30 (Currently Amended): The method of claim 26, further comprising executing the encoder parameter set using a plurality of encoders.

Claim 31 (Currently Amended): The method of claim ~~[[26]]~~25, further comprising determining the available bandwidth for a requested multimedia stream.

Claim 32 (Currently Amended): The method of claim 25, further comprising receiving the multimedia stream at a decoder and decoding the received stream to ~~render~~ output a decoded stream.

Claim 33 (Currently Amended): The method of claim 25, further comprising determining the encoding parameter set to use for re-~~[[]]~~encoding based on the encoding scheme.

Claim 34 (Original): The method of claim 25, further comprising executing the encoder parameter set using an encoder.

Claim 35 (Currently Amended): The method of claim 25, further comprising wirelessly transmitting the re-encoded stream.

Claim 36 (Original): The method of claim 25, further comprising generating an output, configurable for handheld devices that require a first frame rate and a first bandwidth.

Claim 37 (Original): The method of claim 36, wherein:
the first frame rate is 10 frames per second; and

the first bandwidth is within 16 kilo bits per second.

Claim 38 (Currently Amended): The method of claim 25,
wherein the received stream ~~having~~ includes a stream of a first resolution, and
wherein the encoding system re-encodes~~[[ing]]~~ the ~~received stream of the first resolution~~
to stream of a second resolution, a first frame rate and a first bandwidth.

Claim 39 (Currently Amended): The method of claim 38, wherein:
the first resolution is a video graphics array (VGA) format; and
the second resolution and first frame rate are configured for a handheld device.

Claim 40 (Original): The method of claim 38, wherein:
the first frame rate is within 10 to 15 frames per second; and
the first bandwidth is within 16 to 64 kilo bits per second.

Claim 41 (Original): The method of claim 38, wherein
the first frame rate is within 10 to 15 frames per second; and
the first bandwidth is within 32 to 64 kilo bits per second.

Claim 42 (Currently Amended): The method of claim 38, wherein the second resolution is a
resolution of a quarter common intermediate format (QCIF) or smaller.

Claim 43 (Currently Amended): The method of claim 38, wherein the second resolution is a
resolution of a common intermediate format (CIF) or larger.

Claim 44 (Original): The method of claim 25, further comprising receiving the multimedia
stream from a mobile station.

Claim 45 (Currently Amended): The method of claim 44, wherein the mobile station phone
is operable in the wireless communication system.

Claim 46 (Original): The method of claim 25, further comprising receiving the multimedia stream via a communication air interface.

Claim 47 (Original): The method of claim 25, further comprising receiving the multimedia stream via an internet connection.

Claim 48 (Currently Amended): The method of claim 25, further comprising generating [[a]] billing information based on user's preference.

Claim 49 (Currently Amended): An apparatus, operable in a wireless communication system, comprising:

means for receiving, within the wireless communication system, a decoded stream;

means for re-encoding, within the wireless communication system, the received decoded stream to ~~render~~ output an encoded stream; and

means for determining, within the wireless communication system an encoder parameter set to use for re-encoding, wherein the encoder parameter set is determined according to ~~based on~~ an encoding scheme based on available bandwidth of the wireless communication system.

Claim 50 (Currently Amended): The apparatus of claim 49, further comprising means for selecting the first encoding scheme from a group consisting of a scheme based on a system bandwidth, ~~a scheme based on available system bandwidth~~, a scheme based on a wireless receiver capability, a scheme based on a number of users requesting a specific multimedia stream at a designated QoS, a scheme based on a multimedia data type, a scheme based on a user preference and a scheme based on characteristics of a mobile station.

Claim 51 (Original): The apparatus of claim 50, further comprising means for generating billing information using the scheme based on user preference.

Claim 52 (Original): The apparatus of claim 50, further comprising means for generating billing information using the scheme based on multimedia data type.

Claim 53 (Original): The apparatus of claim 50, further comprising means for executing the encoder parameter set using an encoder.

Claim 54 (Original): The apparatus of claim 50, further comprising means for executing the encoder parameter set using plurality of encoders.

Claim 55 (Currently Amended): The apparatus of claim ~~49~~[[50]], further comprising means for determining the available bandwidth for a requested multimedia stream.

Claim 56 (Currently Amended): The apparatus of claim 49, further comprising means for receiving the multimedia stream at a decoder and decoding the received stream to ~~render~~ output the decoded stream.

Claim 57 (Currently Amended): The apparatus of claim 49, further comprising means for determining the encoding parameter set to use for re-[[]]encoding based on the encoding scheme.

Claim 58 (Original): The apparatus of claim 49, further comprising means for executing the encoder parameter set using an encoder.

Claim 59 (Currently Amended): The apparatus of claim 49, further comprising means for transmitting the re-[[]]encoded stream.

Claim 60 (Original): The apparatus of claim 49, further comprising means for generating an output, configurable for handheld devices that require a first frame rate and a first bandwidth.

Claim 61 (Original): The apparatus of claim 60, wherein:

the first frame rate is 10 frames per second; and
the first bandwidth is within 16 kilo bits per second.

Claim 62 (Currently Amended): The apparatus of claim 49, wherein the received stream ~~having~~ comprises a stream of a first resolution and the encoding system means for re-encoding the received stream comprises means for re-encoding the stream of the first resolution to a stream of a second resolution, a first frame rate and a first bandwidth.

Claim 63 (Currently Amended): The apparatus of claim 62, wherein:
the first resolution is a video graphics array (VGA) format; and
the second resolution and first frame rate are configured for a handheld device.

Claim 64 (Original): The apparatus of claim 62, wherein:
the first frame rate is within 10 to 15 frames per second; and
the first bandwidth is within 16 to 64 kilo bits per second.

Claim 65 (Original): The apparatus of claim 62, wherein:
the first frame rate is within 10 to 15 frames per second; and
the first bandwidth is within 32 to 64 kilo bits per second.

Claim 66 (Currently Amended): The apparatus of claim 62, wherein the second resolution is a resolution of a quarter common intermediate format (QCIF) or smaller.

Claim 67 (Currently Amended): The apparatus of claim 62, wherein the second resolution is a resolution of a common intermediate format (CIF) or larger.

Claim 68 (Original): The apparatus of claim 49, further comprising means for receiving the multimedia stream from a mobile station.

Claim 69 (Currently Amended): The apparatus of claim 68, wherein the mobile station ~~phone~~ is operable in wireless communication system.

Claim 70 (Original): The apparatus of claim 49, further comprising means for receiving the multimedia stream via a communication air interface.

Claim 71 (Original): The apparatus of claim 49, further comprising means for receiving the multimedia stream via an internet connection.

Claim 72 (Currently Amended): The apparatus of claim 49, further comprising means for generating [[a]] billing information based on user's preference.

Claim 73 (Original): A mobile station, operable in a communication system, comprising:
a transceiver configured to communicate with a wireless provider system; and
a processor for displaying a multimedia stream received from the wireless provider system via the transceiver, wherein the multimedia stream is encoded using a first encoding scheme selected from a group of encoding schemes.

Claim 74 (Original): The mobile station of claimed in 73, wherein the group of encoding scheme consisting of a scheme based on a system bandwidth, a scheme based on available system bandwidth, a scheme based on a wireless receiver capability, a scheme based on a number of users requesting a specific multimedia stream at a designated QoS, a scheme based on a multimedia data type, a scheme based on a user preference and a scheme based on characteristics of a mobile station.

Claim 75 (Currently Amended): The mobile station of claim 74, wherein the scheme based on user preference is used to generate [[a]] billing information.

Claim 76 (Currently Amended): The mobile station of claim 74, wherein the scheme based on multimedia data type is used to generate [[a]] billing information.

Claim 77 (Currently Amended): The mobile station of claim 74, further comprising an encoder for executing the encoder parameter set based on the encoding scheme.

Claim 78 (Currently Amended): The mobile station of claim 74, further comprising a plurality of encoders, each for executing the encoder parameter set based on the encoding scheme.

Claim 79 (Original): The mobile station of claim 74, further comprising a bandwidth manager for determining the available bandwidth for a requested multimedia stream.

Claim 80 (Currently Amended): A communication system, comprising:
an encode manager for receiving a multimedia stream, wherein the multimedia is encoded at having a first resolution; and
an encoder system for re-encoding the received stream to a second resolution, using an encoding parameter set to render an encoded stream with principles set forth by the encoding parameter set, wherein the encoding parameter set is determined based on an encoding scheme selected from a group of encoding schemes.

Claim 81 (Original): A communication system, comprising:
at least one decoder receiving incoming encoded multimedia streams and decoding the streams to render decoded streams;
at least one encoding system configured for receiving a decoded stream and encoding it using one of at least two encoding parameter sets to render an encoded stream;
at least one computer determining which encoding parameter set to use to encode a decoded stream; and
at least one wireless transceiver for transmitting an encoded stream.

Claim 82 (Currently Amended): The system of Claim 81, wherein the computer determines which of the at least two encoding parameter sets to use based at least in part on a system bandwidth.

Claim 83 (Currently Amended): The system of Claim 81, wherein the computer determines which of the at least two encoding parameter sets to use based at least in part on a current available system bandwidth.

Claim 84 (Currently Amended): The system of Claim 81, wherein the computer determines which of the at least two encoding parameter sets to use based at least in part on a wireless mobile receiver capability.

Claim 85 (Currently Amended): The system of Claim 81, wherein the computer determines which of the at least two encoding parameter sets to use based at least in part on a number of users requesting a specific multimedia stream at a designated QoS for that stream.

Claim 86 (Currently Amended): The system of Claim 81, wherein the computer determines which of the at least two encoding parameter sets to use based at least in part on a multimedia data type.

Claim 87 (Currently Amended): The system of Claim 81, wherein the computer determines which of the at least two encoding parameter sets to use based at least in part on a wireless user preference.

Claim 88 (Original): The system of Claim 86, wherein a user's service classification is used to generate billing information.

Claim 89 (Original): The system of Claim 86, wherein characteristics of the encoded multimedia stream are used to generate billing information.

Claim 90 (Original): The system of Claim 86, wherein mobile receiver capabilities are used to generate billing information.

Claim 91 (Currently Amended): The system of Claim 81, wherein at least one of the at least two encoding parameter sets is capable of encoding a multimedia stream at a resolution of a quarter common intermediate format (QCIF) or smaller.

Claim 92 (Currently Amended): The system of Claim 81, wherein at least one of the at least two encoding parameter sets is capable of encoding a multimedia stream at a resolution of a common intermediate format (CIF) or larger.

Claim 93 (Original): A method for wirelessly providing digital multimedia, comprising:
receiving an encoded multimedia stream;
decoding the stream to render a decoded stream;
selecting at least one of at least two encoding schemes to re-encode the stream at a wireless provider facility to render a re-encoded stream; and
wirelessly transmitting the re-encoded stream to at least one wireless mobile station.

Claim 94 (Original): The method of Claim 93, wherein the selecting act is undertaken dynamically.

Claim 95 (Original): The method of Claim 93, wherein the selecting act is undertaken at least in part based on a bandwidth.

Claim 96 (Original): The method of Claim 93, wherein the selecting act is undertaken based at least in part on a wireless mobile receiver capability.

Claim 97 (Original): The method of Claim 93, wherein the selecting act is undertaken based at least in part on a wireless user preference.

Claim 98 (Original): The method of Claim 93, comprising using a user's service classification to generate billing information.

Claim 99 (Original): The system of Claim 93, comprising using characteristics of the encoded multimedia stream to generate billing information.

Claim 100 (Original): The system of Claim 93, comprising using mobile receiver capabilities is used to generate billing information.

Claim 101 (Original): The method of Claim 93, wherein the selecting act is undertaken based at least in part on a multimedia data type.

Claim 102 (Currently Amended): A wireless provider system, comprising:
means for decoding a received encoded multimedia stream;
first means for re-encoding the stream;
second means for re-encoding the stream; and
logic means for determining which one of the first and second means for re-encoding the stream to use, based on at least one factor.

Claim 103 (Original): The system of Claim 102, wherein the factor is a system bandwidth.

Claim 104 (Original): The system of Claim 102, wherein the factor is a current available system bandwidth.

Claim 105 (Original): The system of Claim 102, wherein the factor is a wireless user characteristic.

Claim 106 (Original): The system of Claim 102, wherein the factor is a multimedia data type.

Claim 107 (Original): The system of Claim 102, wherein the factor is a wireless user preference.

Claim 108 (Currently Amended): The system of Claim 102, ~~wherein~~ further comprising means for generating billing information based on a user service classification ~~is used to generate billing information.~~

Claim 109 (Currently Amended): The system of Claim 102, ~~wherein~~ further comprising means for generating billing information based on characteristics of the encoded multimedia stream ~~are used to generate billing information.~~

Claim 110 (Currently Amended): The system of Claim 102, ~~wherein~~ further comprising means for generating billing information based on mobile receiver capabilities ~~are used to generate billing information.~~

Claim 111 (Currently Amended): The system of claim 102, wherein the factor is selected from group of factors consisting of a factor based on a system bandwidth, a factor based on a current available system bandwidth, a factor based on a wireless user characteristic, a factor based on a number of users requesting a specific multimedia stream at a designated QoS a factor based on a multimedia data type and factor based on a wireless user preference.

Claim 112 (Currently Amended): A communication system, comprising:
decoder means for receiving incoming encoded multimedia streams and decoding the streams to ~~render~~ output decoded streams;
encoder means for receiving and encoding at least one of the decoded streams ~~and encoding it~~ using one of at least two encoding parameter sets to ~~render~~ output an encoded stream,
wherein the encoder means further includes means ~~and~~ for determining which encoding parameter set to use to encode ~~[[a]]the at least one of the~~ decoded streams; and
transceiver means for transmitting an encoded stream.

Claim 113 (Currently Amended): The system of Claim 112, wherein the encoder means ~~further~~ includes means for determining which of the at least two encoding parameter sets to use based at least in part on a system bandwidth.

Claim 114 (Currently Amended): The system of Claim 112, wherein encoder means ~~further~~ includes means for determining which of the at least two encoding parameter sets to use based at least in part on a current available system bandwidth.

Claim 115 (Currently Amended): The system of Claim 112, wherein the encoder means ~~further~~ includes means for determining which of the at least two encoding parameter sets to use based at least in part on a wireless mobile receiver capability.

Claim 116 (Currently Amended): The system of Claim 112, wherein the encoder means ~~further~~ includes means for determining which of the at least two encoding parameter sets to use based at least in part on a number of users requesting a specific multimedia stream at a designated QoS for that stream.

Claim 117 (Currently Amended): The system of Claim 112, wherein the encoder means ~~further~~ includes means for determining which of the at least two encoding parameter sets to use based at least in part on a multimedia data type.

Claim 118 (Currently Amended): The system of Claim 112, wherein the encoder means ~~further~~ includes means for determining which of the at least two encoding parameter sets to use based at least in part on a wireless user preference.

Claim 119 (Original): The system of Claim 112, further comprising a billing means for generating billing information based on a user's classification.

Claim 120 (Original): The system of Claim 112, further comprising a billing means for generating billing information based on characteristics of the encoded multimedia stream a user's classification.

Claim 121 (Original): The system of Claim 112, further comprising a billing means for generating billing information based on mobile receiver capabilities.

Claim 122 (Currently Amended): The system of Claim 112, wherein at least one of the at least two encoding parameter sets comprises an ~~encoding means~~ an encoding parameter set that is used to encode the multimedia stream at a resolution of a quarter common intermediate format (QCIF) or smaller.

Claim 123 (Currently Amended): The system of Claim 112, wherein at least one of the at least two encoding parameter sets comprises an ~~encoding means~~ an encoding parameter set that is used to encode the multimedia stream at a resolution of a common intermediate format (CIF) or larger.